

## Penetration Needles and Cones

Application	Specification	Model	Description
Bituminous materials	ASTM D5; AASHTO T49, IP49; ASA Std., A37.1; Fed Spec. SS.R. 406C, Meth. 214.01	H-1280	Standard hardened stainless steel needle, 40-45mm exposed needle length. Wt. 2.5g.
		H-1300	Same as H-1280. Certified to ASTM accuracy by independent laboratory. Wt. 2.5g.
		H-1302	Same as H-1290. Certified to ASTM accuracy by independent laboratory. Wt. 2.5g.
		H-1290	Long hardened stainless steel needle, 50-55mm exposed needle length. Wt. 2.5g.
Waxes with 250 or less penetration	ASTM D1321	H-1310	Hardened stainless steel wax penetration needles with tapered point, blunt tip of truncated cone. Ferrule is approx. 3.2mm dia. Wt. 2.5g.
Battery paste	N/A	H-1317	Same as H-1310. Certified to ASTM accuracy by independent laboratory.
Joint sealant for asphalt & concrete pavements	ASTM D5329	H-1255	Hardened stainless steel tip with special plunger. Total wt. 60g ± .050g.
Grease-testing penetrometers	ASTM D217, D937 ASA Std. Z11.3	H-1320	Resilience ball penetration tool. Total wt. 27.5g.
For all 90° cones		H-2520	Hollow 90° brass cone, highly polished stainless steel tip. Removable nut and stem. Wt. 102.5g.
Grease-testing penetrometers		H-2522	Same as H-2520, completely made of stainless steel. Wt. 102.5g.
Grease-testing penetrometers	ASTM D2884	H-2525	Stainless steel replacement tip, nut and stem.
Food products and paste paints	ASTM D2884	H-2524	Magnesium cone and plunger, same dim. as H-2520. Total wt. cone and plunger 30.0g.
Food products and paste paints	U.S. Dept. of Agriculture	H-2529	Aluminum. Same dimension as H-2520. Total wt. 35g.
(shortenings, margarine, butter, etc.) Measuring firmness of solid and plasticized fats	AOCS Cc 16-60	H-1270	10° aluminum cone, 3.2mm ferrule, 0.8mm stainless steel blunt tip. Overall length 106mm. Wt. 45g.
(i.e., recovery of used grease) Small obtainable samples	ASTM D1403	H-2519	1/4 scale. (Not considered a substitute for full-size cone specified in ASTM D217.) Wt. 9.38g.

## Penetration Needles and Cones

